

CLAIMS

1. A semiconductor device, comprising:  
5      a substrate having circuitry formed therein;  
Sub<sup>1</sup>      a passivation layer formed overlying at least a portion of the substrate;  
and  
a fuse, which may be selectively open-circuited, formed overlying the  
passivation layer.

10      2. A semiconductor device as in claim 1, wherein a recessed area is formed in  
the passivation layer and wherein at least a portion of the fuse is formed in  
the recessed area.

15      3. A semiconductor device as in claim 1, wherein the fuse comprises a metal.

4. A semiconductor device as in claim 3, wherein the fuse comprises  
aluminum.

20      5. A semiconductor device as in claim 1, wherein the fuse comprises a metal  
nitride.

6. A semiconductor device as in claim 1, wherein the fuse comprises a metal  
and a metal nitride.

- (1)
- (2)
7. A semiconductor device as in claim 1, wherein the fuse comprises a metal having a thickness less than approximately 1 micron.
- 5        8. A semiconductor device as in claim 1, wherein the circuitry comprises a first circuit and a second circuit, the semiconductor device further comprising:  
a first interconnect for electrically connecting the first circuit to a first portion of the fuse; and  
a second interconnect for electrically connecting a second circuit to a second portion of the fuse,  
wherein the first circuit and the second circuit are no longer electrically connected if the fuse is open-circuited.
- 10      9. A semiconductor device as in claim 1, wherein the fuse is electrically connected to only the circuitry, and is not electrically connected to anything external to the circuitry.
- 15      10. A semiconductor device as in claim 1, further comprising:  
a packaging material formed on the fuse.
- 20      11. A semiconductor device, comprising:  
a substrate having a first circuit formed therein and a second circuit formed therein, wherein the first circuit has a first contact area and the second circuit has a second contact area;  
a passivation layer formed overlying at least a portion of the substrate;  
25        and

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- a fuse, which may be selectively open-circuited, formed overlying the passivation layer, the fuse having a third contact area which is electrically coupled to the first contact area of the first circuit, and the fuse having a fourth contact area which is electrically coupled to the second contact area of the second circuit,
- wherein the first contact area of the first circuit and the second contact area of the second circuit are no longer electrically connected if the fuse is open-circuited.
12. A semiconductor device as in claim 11, wherein a recessed area is formed in the passivation layer and wherein at least a portion of the fuse is formed in the recessed area.
13. A semiconductor device as in claim 11, wherein the fuse comprises a metal.
14. A semiconductor device as in claim 13, wherein the fuse comprises aluminum.
15. A semiconductor device as in claim 11, wherein the fuse comprises a metal nitride.
16. A semiconductor device as in claim 11, wherein the fuse comprises a metal and a metal nitride.

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17. A semiconductor device as in claim 11, wherein the first contact area of the first circuit and the second contact area of the second circuit are electrically connected only by way of the fuse.

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5 18. A method for forming a semiconductor device having a fuse, comprising:  
providing a substrate;  
forming a passivation layer overlying at least a portion of the substrate;  
and  
forming the fuse overlying the passivation layer.

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19. A method of claim 18, further comprising:  
forming a packaging material on the fuse.

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20. A method of claim 18, further comprising:  
blowing the fuse before forming a packaging material on the fuse.

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